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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/509,294

09/23/2004

Robert Schill

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EXAMINER

GWARTNEY, ELIZABETH A

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/509,294	Applicant(s) SCHILL ET AL.	
	Examiner Elizabeth Gwartney	Art Unit 4145	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 11-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 21 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20040923</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of claims 1-10 and 21-22 in the reply filed on March 4, 2008 is acknowledged. The traversal is on the ground(s) that claims as amended all include the same special technical feature of the process as recited in claim 1 and therefore there is no Lack of Unity. This is not found persuasive because while the special technical feature is shared between all three groups of inventions, it does not offer contribution over the prior art, because said process steps are disclosed by Hultin et al. (US 6,005,073), as set forth below.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 11-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on March 4, 2008.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
6. Claims 1-10, and 21- 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hultin et al. (US 6,005,073) in view of Van Zile ("Surimi Processing").

Regarding claim 1, Hutlin et al. disclose a process for the manufacture of intermediate food products in a form of hydrated concentrates of myofibrillar proteins from fish flesh (Abstract, C7/L44-49), said process comprising the following steps:

- an initial pulp of minced fish flesh is prepared from fish fillets (C8/L54, Figure 2);
- said initial pulp is washed with water (C9/L5-9, Figure 2);
- said washed pulp is refined in the wet state by removing a fraction of impurities (see refiner - Figure 2);
- the pulp is drained to produce a densified pulp (see screw press- Figure 2);
- cryoprotectants are added to the densified pulp to form a final pulp suitable for freezing (see cryo protectants – Figure 2);

-and said final pulp is frozen (see freeze – Figure 2).

Hultin et al. do not disclose that the refined pulp is mixed until it is in a form of a homogenous emulsion or that the final pulp is packaged in a form of blocks.

Regarding packaging in a form of blocks, Van Zile teaches that it is well known in the art to form processed fish mince (i.e. surimi) into blocks prior to freezing (p. 3/L17-18). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the processed fish mince of Hultin et al. into blocks prior to freezing because this procedure is commonly used for surimi processing and use of a known process step in a known environment to accomplish entirely expected results.

Regarding mixing the refined pulp to form a homogenous emulsion, while Hultin et al. disclose a process to manufacture intermediate food products in a form of hydrated concentrates of myofibrillar proteins (i.e. surimi) wherein fish pulp is homogenized with wash water (Figure 4) to form an emulsion, the reference does not explicitly disclose homogenizing refined pulp. Where homogenization of fish pulp containing protein and lipid forms an emulsion, since refined fish pulp contains both protein and lipid, it would be inherent that refined fish pulp forms a stable emulsion. It would be obvious to one of ordinary skill in the art at the time the invention was made to have homogenized the refined fish pulp of Hultin et al. rather than the unrefined fish pulp, because doing so would amount to nothing more than using the homogenization step to create a stable fish protein and lipid emulsion.

Regarding claim 2, Hultin et al. disclose all of the claim limitations as set forth above and that the pulping operation is coupled with addition of water (see rinse water – Figure 2).

Regarding claim 3, Hultin et al. disclose all of the claim limitations as set forth above, but the reference fails to disclose that water is added in a ratio of at least one volume of water to three volumes of pulp. As ease of processing (i.e. flowability) is variable(s) that can be modified, among others, by adjusting the ratio of water to pulp in the surimi process, with said flowability increasing as the ratio of water to pulp is increased, the precise ratio of water to pulp would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed water to pulp ratio cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the ratio of water to pulp in the surimi process of Hultin et al. to obtain the desired balance between water usage and flowability (In re Boesch, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (In re Aller, 105 USPQ 223).

Regarding claims 4 and 21, Hultin et al. disclose all of the claim limitations as set forth above. Hultin does not disclose that the pulping operation is carried out as a function of a density gradient of the fish fillets. Van Zile teaches that fish pulp is obtained by pushing fish fillets through a perforated drum to separate the fish meat from the skin and bones (p.1/L42-43). Further, Van Zile teaches that the separation process is a function of the size of the drum perforations and the pressure used to get the meat through the drum (p. 2/L5-9).

Hultin et al. and Van Zile are combinable because they are concerned with the same field of endeavor, namely, surimi processing. It would have been obvious to one of ordinary skill in

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the art at the time the invention was made to have used a perforated drum, as taught by Van Zile, in the pulping operation of Hultin et al. for the purpose of separating the fish meat from the skin and bone components.

Regarding claim 5, Hultin et al. disclose all of the claim limitations as set forth above.

Further, Hultin et al. disclose that the washing operation is composed of the following steps:

- water is added to the initial pulp and the whole is mixed to form a water-pulp mixture (C9/L5-7);

- the water-pulp mixture is centrifuged and the resulting water is removed (C9/L10-12);

- and the centrifuged pulp is washed continuously with water (Figure 2, C9/L8-9).

Regarding claim 6, Hultin et al. disclose all of the claim limitations as set forth above, however, the reference does not disclose that in the centrifugation step, a volume of water removed is between 80 and 95% of a volume of water initially used. As the recovery of sarcoplasmic proteins is a variable that can be modified, among others, by adjusting the volume of water removed in the centrifugation step, the precise volume removed would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed volume of water removed cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the volume of water removed in the centrifugation step in the surimi process of Hultin et al. to obtain the desired recovery of sarcoplasmic proteins (In re Boesch, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art,

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discovering the optimum or workable ranges involves only routine skill in the art. (In re Aller, 105 USPQ 223).

Regarding claim 7, Hultin et al. disclose all of the claim limitations as set forth above. While Hultin et al. disclose mixing is carried out until a homogenized pulp is in a form of an emulsion, the reference fails to disclose that the emulsion has a stability of more than 10 minutes. As oxidative stability is a variable that can be modified, among others, by adjusting the stability of the fish pulp emulsion, the emulsion stability would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed emulsion cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the stability of the fish pulp emulsion of Hultin et al. to obtain the desired level of oxidative stability (In re Boesch, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (In re Aller, 105 USPQ 223).

Regarding claims 8-9, Hultin et al. disclose all of the claim limitations as set forth above and that the mixing step is followed by a deodorization of the emulsified pulp in which the latter is evacuated (see micronize under vacuum removing low molecular weight compounds responsible for off or rancid odors - C12/L42-45) and where the operation for draining the emulsified pulp is carried out by centrifugal decantation (Figure 4).

Regarding claim 22, Hultin et al. disclose all of the claim limitations as set forth above. Hultin et al. fail to disclose that the initial pulp is washed to obtain a washed pulp containing a

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residual fraction of lipids and sarcoplasmic proteins comprised between 0.1 and 3% of the weight of the pulp. As processing efficiency and oxidative stability are variables that can be modified, among others, by adjusting the residual fraction of lipids and sarcoplasmic proteins in the washed pulp, the precise residual fraction of lipids and sarcoplasmic proteins would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the residual fraction of lipids and sarcoplasmic proteins in the washed pulp cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the residual fraction of lipids and sarcoplasmic proteins in the washed pulp of Hultin et al. to obtain the desired balance between processing efficiency and oxidative stability (In re Boesch, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (In re Aller, 105 USPQ 223).

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hultin et al. (US 6,005,073) in view of Van Zile ("Surimi Processing") as applied to claim 1 above, and further in view of Shah et al. (WO 01/62888).

Regarding claim 10, Hultin et al. disclose all of the claim limitations as set forth above. While Hultin et al. disclose the addition of cryoprotectants, the reference does not explicitly disclose that the final pulp is subjected to a cold extrusion operation during the addition of cryoprotectants. Shah et al. teaches that it is well known in surimi processing to add cryoprotectants and extrude the final pulp prior to freezing (p.3/L3-5). Further, it is well known

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in the art that high temperatures will damage protein functionality. Therefore, it would have been obvious at the time the invention was made to have subjected the final pulp of Hultin et al. to a cold extrusion operation while adding cryoprotectants because doing so would amount to nothing more than use of a known surimi freezing process of its intended use in a known environment to accomplish entirely expected results. Further, doing so would protect the functionality of the refined protein.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Gwartney whose telephone number is (571) 270-3874. The examiner can normally be reached Monday - Thursday; 7:30AM - 5:00PM EST, working alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on (571) 272-1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/E. G./

Examiner, Art Unit 4145

/Basia Ridley/

Supervisory Patent Examiner, Art Unit 4145